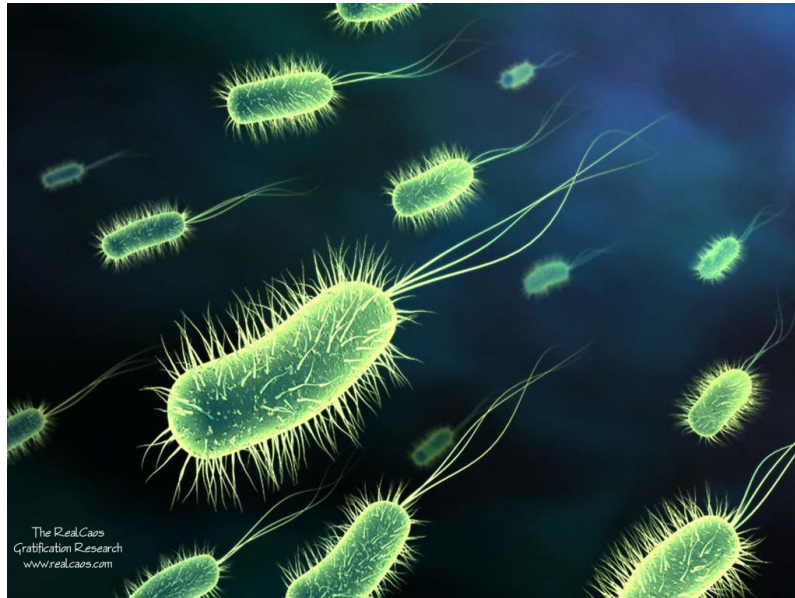


Good and Bad Bacteria



Nov 12-8:58 PM

Bacteria - most numerous and diverse organisms on Earth. Half of human diseases are caused by bacteria. Less than 1% of bacteria are pathogenic. Most bacteria are beneficial.



Nov 12-8:02 PM

Good and Helpful Bacteria

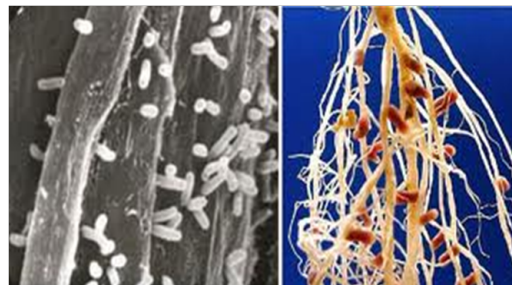
- Decomposers
- Agriculture- Nitrogen Fixation
- Photosynthesis (oxygen)
- Oil spill clean up
- Digestion aid & vitamin production
- Foods such as cheese and yogurt
- Medicines



Nov 12-8:10 PM

Bacteria benefit agriculture because of nitrogen fixation.

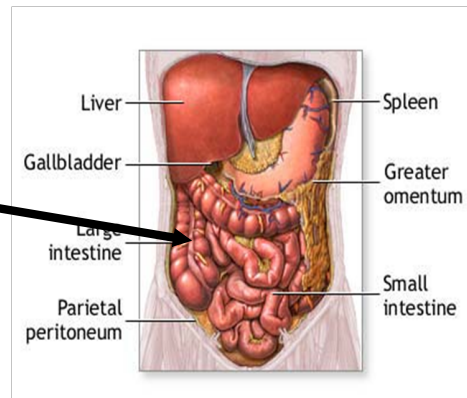
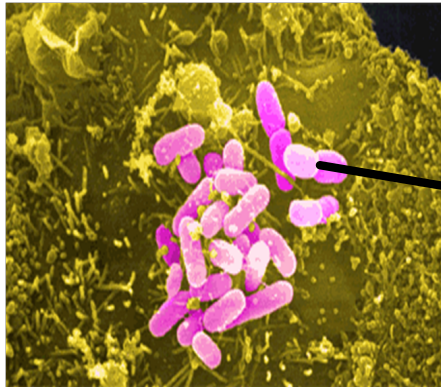
Bacteria in the roots of some plants can convert nitrogen (N_2) in the atmosphere into a form usable by plants.



Without nitrogen-fixing bacteria, vegetation would grow at a slower rate.

Nov 12-8:16 PM

***E. coli* in the intestines aid in digestion and produce vitamins in exchange for food and a warm home.**



What type of symbiotic relationship is this?

Nov 12-8:23 PM

Bacterial Disease

Bacteria can be **pathogens** (cause disease)

2 ways of causing sickness:

1) Break down cells for food

● Example:

* ***Mycobacterium tuberculosis*** = causes tuberculosis which destroys lung tissue.

Nov 12-8:45 PM

2) Release toxins (poisons) that interfere with the normal activity of the host

- Examples:

* *Streptococcus pyogenes* = Causes strep throat & releases toxins in the bloodstream which can cause scarlet fever.

* *Corynebacterium diphtheriae* = Causes diphtheria and toxins released into bloodstream destroy tissues; can lead to breathing problems, heart failure, paralysis, and death.

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Preventing Bacterial Disease

Food Safety



Good hygiene

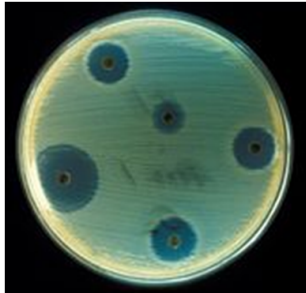


Vaccine- shot of weakened or killed pathogen; causes development of immunity (antibodies)

Nov 12-8:49 PM

Treating Bacterial Diseases

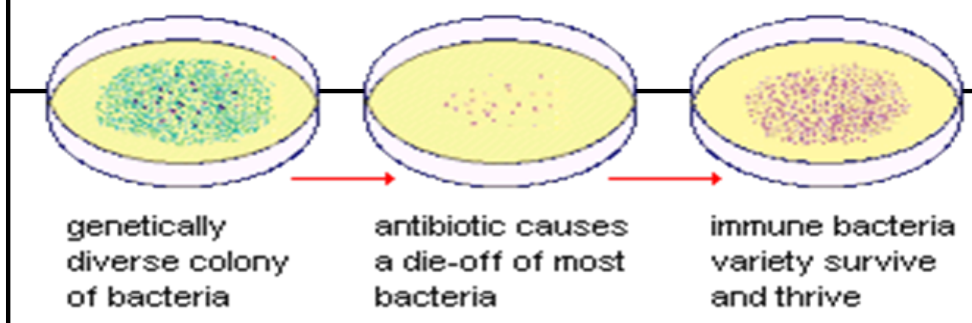
Antibiotics – chemicals that can kill, block growth, and reproduction of bacterial cells ONLY



Many bacteria have become resistant to antibiotics

Nov 12-8:54 PM

Evolution of antibiotic resistant bacteria



Bacteria are genetically diverse. This diversity allows some individuals in a population to survive and pass the genes for antibiotic resistance to the next generation.

Nov 8-8:29 PM